



12AU7

MEDIUM-MU TWIN TRIODE

9-PIN MINIATURE TYPE

12AU7

GENERAL DATA

Electrical:

Heater, for Unipotential Cathodes:

Heater arrangement	Series	Parallel	
Voltage	12.6	6.3	ac or dc volts
Current	0.15	0.3	amp

Direct Interelectrode Capacitances (Approx.):

Unit No.1 Unit No.2

Without external shield:

Grid to plate	1.5	1.5	μf
Grid to cathode and heater. . . .	1.6	1.6	μf
Plate to cathode and heater . . .	0.4	0.32	μf

With external shield, JETEC No.315, connected to cathode:

Grid to plate	1.5	1.5	μf
Grid to cathode and heater. . . .	1.8	1.8	μf
Plate to cathode and heater . . .	2	2	μf

Characteristics, Class A₁ Amplifier (Each Unit):

Plate Voltage	100	250	volts
Grid Voltage	0	-8.5	volts
Amplification Factor.	20	17	
Plate Resistance (Approx.).	6500	7700	ohms
Transconductance.	3100	2200	μmhos
Plate Current	11.8	10.5	ma
Grid Voltage (Approx.) for plate current of 10 $\mu\text{amp.}$	-	-24	volts

Mechanical:

Mounting Position	Any
Maximum Overall Length.	2-3/16"
Maximum Seated Length	1-15/16"
Length, Base Seat to Bulb Top (Excluding tip). . .	1-9/16" $\pm$ 3/32"
Maximum Diameter.	7/8"
Bulb.	T-6-1/2
Base.	Small-Button Noval 9-Pin (JETEC No.E9-1)
Basing Designation for BOTTOM VIEW.	9A

Pin 1 - Plate of
Unit No.2
Pin 2 - Grid of
Unit No.2
Pin 3 - Cathode of
Unit No.2
Pins 4 & 9 - Heater of
Unit No.2
Pins 5 & 9 - Heater of
Unit No.1



Pin 6 - Plate of
Unit No.1
Pin 7 - Grid of
Unit No.1
Pin 8 - Cathode of
Unit No.1
Pin 9 - Heater
Mid-Tap

← Indicates a change.

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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MEDIUM-MU TWIN TRIODE

AMPLIFIER - Class A₁

Values are for Each Unit

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE	300 max.	volts
CATHODE CURRENT	20 max.	ma
PLATE DISSIPATION	2.75 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode .	200 max.	volts
Heater positive with respect to cathode .	200 max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:		
For fixed-bias operation.	0.25 max.	megohm
For cathode-bias operation.	1.0 max.	megohm

Typical Operation as Resistance-Coupled Amplifier:

See RESISTANCE-COUPLED AMPLIFIER CHART No.10
at front of this Section

HORIZONTAL DEFLECTION OSCILLATOR

Values are for Each Unit

Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE.	300 max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE [▲]	600 max.	volts
CATHODE CURRENT:		
Peak.	300 max.	ma
Average	20 max.	ma
PLATE DISSIPATION	2.75 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode .	200 max.	volts
Heater positive with respect to cathode .	200 max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:		
For fixed-bias, grid-resistor bias, or cathode-bias operation.	2.2 max.	megohms

VERTICAL DEFLECTION OSCILLATOR

Values are for Each Unit

Maximum Ratings, Design-Center Values:

For operation in a 525-line, 30-frame system[□]

DC PLATE VOLTAGE.	300 max.	volts
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[▲] This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

[▲], [□]: See next page.

→ Indicates a change.

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MEDIUM-MU TWIN TRIODE

PEAK NEGATIVE-PULSE GRID VOLTAGE	400 max.	volts
CATHODE CURRENT:		
Peak	60 max.	ma
Average	20 max.	ma
PLATE DISSIPATION	2.75 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200 [▲] max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:	
For fixed-bias, grid-resistor bias, or cathode-bias operation	2.2 max. megohms

VERTICAL DEFLECTION AMPLIFIER*Values are for Each Unit***Maximum Ratings, Design-Center Values Except as Noted:***For operation in a 525-line, 30-frame system[□]*

DC PLATE VOLTAGE	300 max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE [#]		
(Absolute maximum)	1200 [■] max.	volts
PEAK NEGATIVE-PULSE GRID VOLTAGE	250 max.	volts
CATHODE CURRENT:		
Peak	60 max.	ma
Average	20 max.	ma
PLATE DISSIPATION	2.75 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200 [▲] max.	volts

Maximum Circuit Values:

Grid-Circuit Resistance:	
For cathode-bias operation	2.2 max. megohms

[▲] The dc component must not exceed 100 volts.[□] As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.[#] This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.[■] Under no circumstances should this absolute value be exceeded.

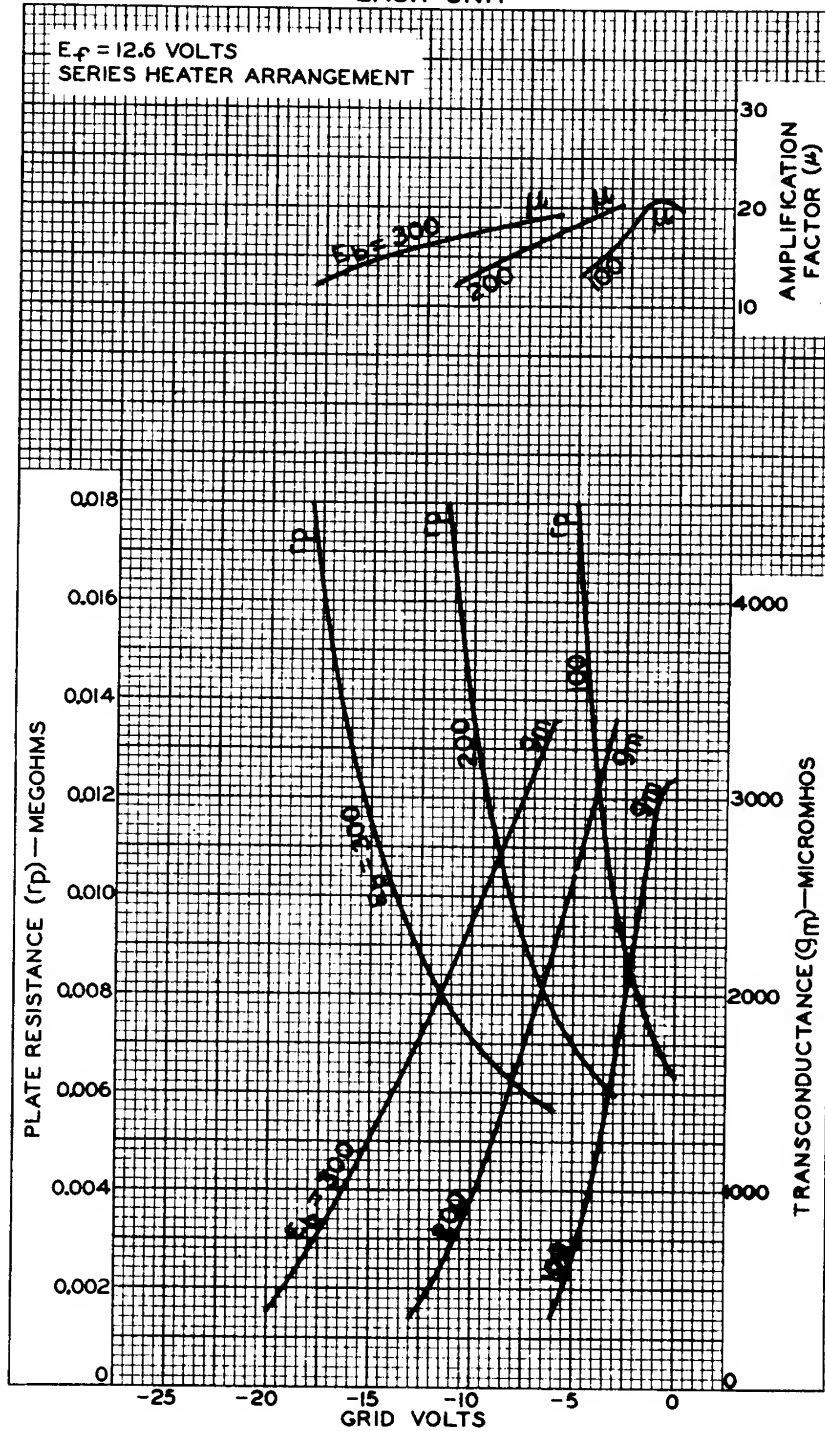
The curves under Type 6C4 also apply to each unit
of the 12AU7

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AVERAGE CHARACTERISTICS EACH UNIT



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92CM-8564R1